

S
622.33 HKM Associates
L3hbmnp Hill/Blaine Mine
1991? Reclamation
Project, Hill and
Blaine Counties,
northwestern
Montana

F I N A L R E P O R T

HILL/BLAINE MINE RECLAMATION PROJECT
DSL-AMRB90-019

HILL AND BLAINE COUNTIES
NORTHWESTERN, MONTANA
T.31N., R.17E., SEC. 4 AND 5
T.35.N, R.19.E., SEC. 19
T.31.N., R.19.E., SEC. 7 AND 8

HKM ASSOCIATES
BILLINGS, MONTANA

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1. INTRODUCTION



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1.1 Site Description

The Hill/Blaine Mine Reclamation Project required four abandoned coal mines sites to be reclaimed. The coal mine sites were located in shallow coulees alongside small drainages (See Figures 1 through 4). Mine sites consisted of open and collapsed adits, subsidence holes and coal slack piles.

The largest mine site, the Reserve Site, was located seven miles southwest of Havre, Montana. Many collapsed adits and subsidence holes existed within two coulees that formed one main drainage. Seven coal slack piles existed, all of which were found adjacent to the drainage bottoms. Subsidence holes and collapsed adits were found above each slack pile. In many areas along the sides of the coulees, natural coal outcrops were visible. Some of these outcrops were sparsely vegetated. Two old mine buildings existed at the junction of the drainages. The drainage channel had undercut one of these buildings, leaving one corner of the building unsupported.

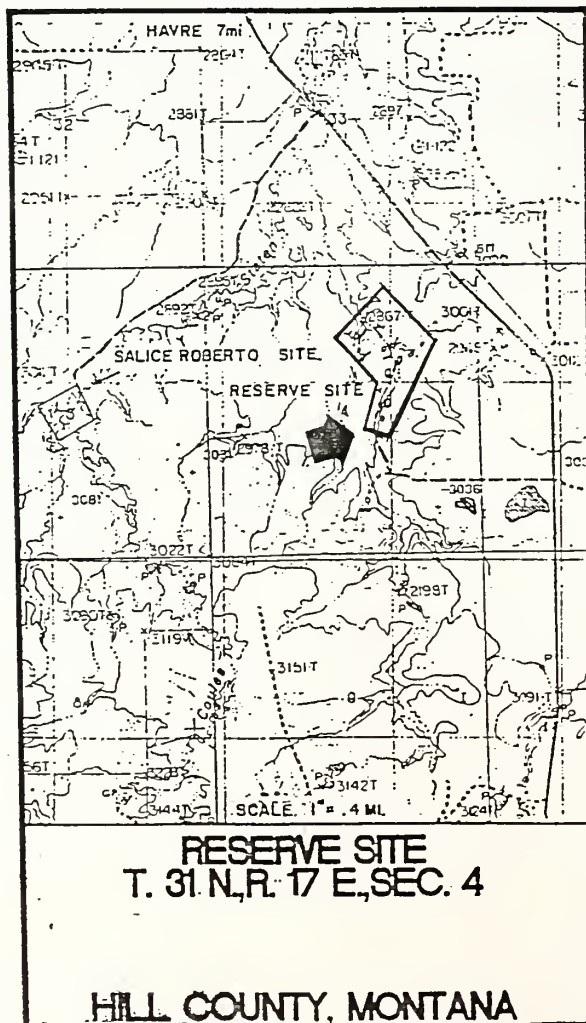
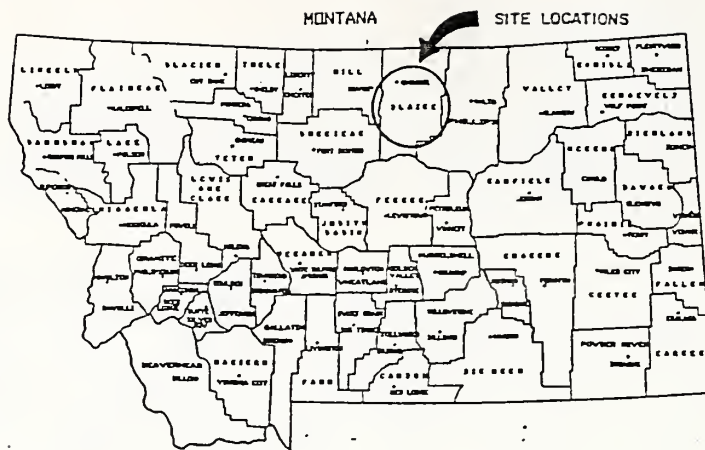
Approximately one mile west of the Reserve Site was the Salice Roberto Mine Site. This abandoned coal mine consisted of four adits and a number of subsidence holes. This site was also within a coulee alongside a small drainage. Access to this site was via a two track farm road.

The Sorenson Mine Site is located approximately eleven miles south of Chinook, Montana. A large coal slack pile existed at the base of a small hill where the adit was located. The adit had been plugged pryor to construction utilizing three to five foot diameter rocks. On the top of the hill above the adit many subsidence holes had developed. A few of these holes had been reported by the landowner to have developed in recent years. The coal slack pile was surrounded by three springs that originated around the collapsed adit. A rock building foundation existed approximately seventy-five feet west of the adit.

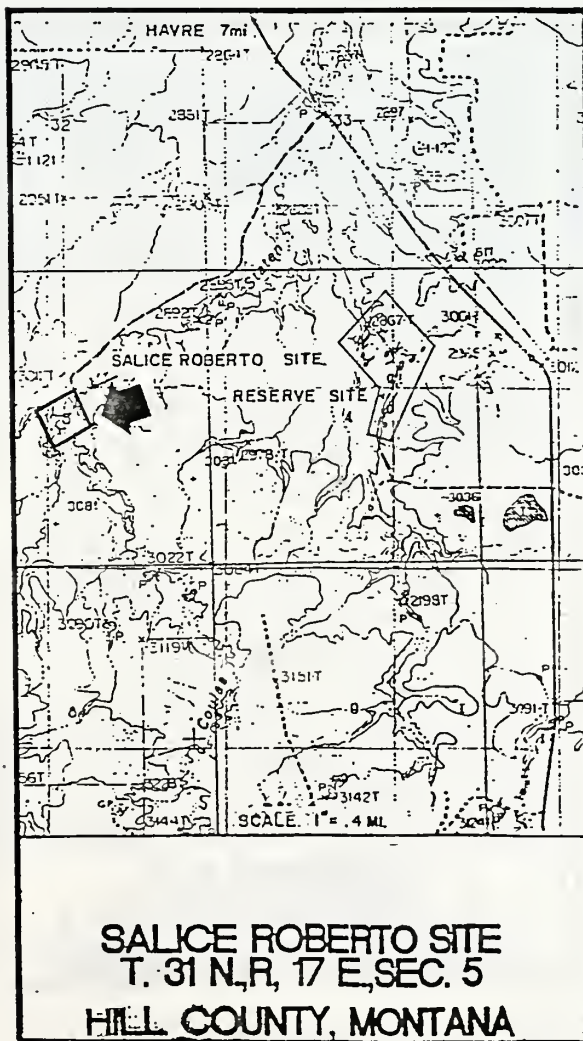
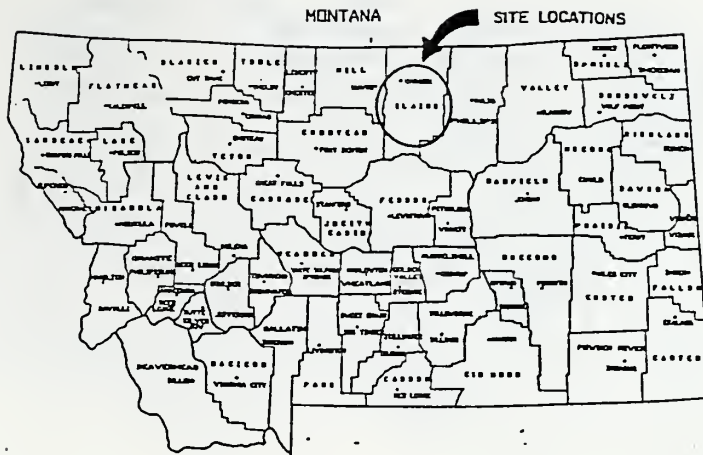
The fourth mine site was the Ehlang Site. This site is located thirteen miles north of Chinook, Montana. This site consisted of two collapsed adits, three coal slack piles and various subsidence holes. All of these features existed on the south face of a small hill.

1.2 Maps Showing Mine Locations

Maps showing mine locations are shown in Figures 1 through 4 on next four pages.



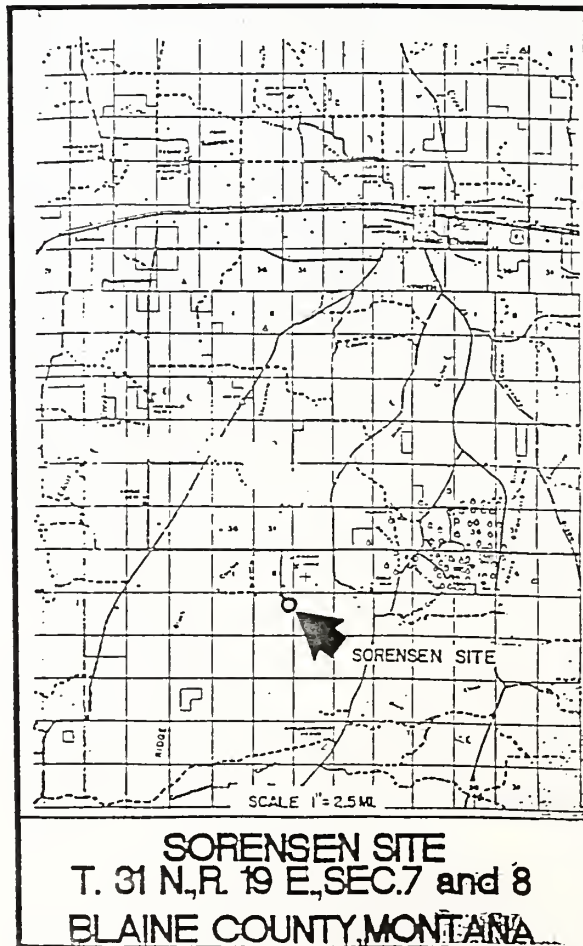
LOCATION MAP



LOCATION MAP

- 3 -

FIGURE 2



LOCATION MAP

1.3 Project Objectives

The following objectives were established in the design phase by HKM:

- A. Remove and bury coal slack from stockpiled areas.
- B. Remove all debris from within mine site.
- C. Investigate and backfill all adits and subsidence holes.
- D. Regrade all areas to match existing terrain.
- E. Apply lime at a rate of 20 tons/acre to all coal slack and former slack piles.
- F. Provide a minimum of 8" of topsoil on all limed and disturbed areas.
- G. Revegetate all areas of disturbance with native grasses.
- H. Allow for revegetation process to be established with a four wire fence encompassing all areas.

These objectives were established to achieve an end product that would eliminate potential hazards to humans, livestock and wildlife. Regrading and revegetation processes were needed to help stop any further erosion in mined areas.

2. RESPONSIBLE PARTIES

2.1 Contractor

The general contractor who constructed all four sites was:

Mitchell Brothers, Inc.
Glendive, Montana

2.2 Reclamation Plan

The reclamation plan was developed by:

Delta Engineering
Great Falls, Montana

2.3 Engineering Plan

The engineering plan for the mine sites was developed by:

HKM Associates
Billings, Montana

2.4 Quality Control Inspection

Quality control for the reclamation project was jointly inspected by:

Dale Herbort, Department of State Lands,
Rick J. Estes, E.I.T., and
Greg C. Underhill, E.I.T.
HKM Associates

2.5 AMRB Coordination

Abandoned Mine Reclamation Bureau Coordinator was:

Dale Herbort

3. C H R O N O L O G I C A L L I S T I N G
 O F E V E N T S

3.1 Pre-Bid Conference

Pre-Bid conference was held on September 6, 1990, for the showing of all four mine sites.

3.2 Bid Date

The bid date for the Hill/Blaine Mine reclamation project was September 18, 1990.

3.3 Two Lowest Bids

The following were the only bids received for reclamation of the four sites:

Mitchell Bros., Inc.	Shumaker Trucking and
Glendive, Montana	Excavation Contractors, Inc.
\$77,647.61	\$101,491.00

3.4 Contract Award

The contract for this reclamation work was awarded to Mitchell Brothers, Inc., Glendive, Montana.

3.5 Notice Of Award

Notice of Award was given on October 3, 1990

3.6 Notice to Proceed

The Notice to Proceed With Construction was given on October 10, 1990

3.7. Construction Start-up

Construction Start-up date was October 10, 1990

3.8 Change Orders

A Change Order to allow Access Road work was given on October 3, 1990.

3.9 Work Stoppages

No work stoppages were encountered.

3.10 Requests for payment

The only Request for payment was the final request in the amount of \$72,725.72 by Mitchell Brothers, Inc. on

November 19, 1990. This request was made after the final inspection was made by Dale Herbort and Greg Underhill.

3.11 Substantial Completion

Substantial completion of this project was given on November 9, 1990.

3.12 Final Completion

The final completion and approval of all work was made on November 9, 1990.

3.13 Final Payment(s)

Mitchell Brothers - \$73,460.32 - November 21, 1990

4. C O N S T R U C T I O N

4.1 Description Of Project Plan

The reclamation work on the Reserve Mine Site consisted of the excavation of five pits to allow for the burial of the coal slack that existed on-site. Burial of the coal slack and the debris was to be in these pits. Coal slack was also to be used to fill many subsidence holes that existed throughout the site. All coal slack areas were to be limed at a rate of 20 tons/acre with CaCO_3 before an 8" minimum thickness of topsoil was placed for cover.

Two old buildings existed in the northwest corner of the site. These structures were to be torn down and the debris was to be buried in one of the excavated pits. All adits that existed on-site were to be investigated with a backhoe and then filled with approved material. This material was required to be compacted to achieve eighty-five percent (85%) of the maximum dry density. Topsoil was to be applied to all areas that were disturbed by construction. Prior to top soil placement, lime was incorporated into all areas of exposed slack. These areas were then fertilized, disced, seeded, mulched and crimped. All areas within the site were to be surrounded by a barbed four wire fence. This fence is constructed with gates to allow entry.

The Salice Roberto, Sorenson, and Ehlang Mine Sites were to be reclaimed using the same techniques used on the Reserve Site. On all areas that were too steep for mechanical methods of revegetation, hand methods were substituted.

4.2 Major Equipment List

<u>TYPE</u>	<u>MAKE/MODEL</u>	<u>NUMBER ON JOB</u>
14 Yard	T.S. Scraper	1
D-7F	Caterpillar	2
680E	Case Backhoe	3
A66	Ford Loader	4

4.3 Contractor Employees

Number of Contractor Employees on Job: 8

4.4 Construction Activities

Mitchell Brothers, Inc., was able to use the 14 yard scraper to remove all large quantities of coal slack that existed on the Reserve and Sorenson Mine Sites. The haul

distances were very short and usually confined to a small area. This made some hauls very time intensive due to the lack of maneuverability.

The dozer was used to dig pits on the Reserve Site and also to track over debris. The dozer was also used to backfill and compact old coal slack and debris within the pit boundaries. The loader hauled all coal slack to subsidence holes and also was used for the backfilling of some pits. The backhoe was responsible for the topsoil stripping of subsidence holes in addition to the investigation of these holes.

After the removal of the coal slack and the regrading was complete, lime was spread at a rate of 20 tons/acre to all coal slack and former coal slack areas. The spreading of the 50 lb. sacks of lime was done by hand. The lime was then incorporated into the slack by discing.

Topsoil was placed to a minimum depth of 8" over all areas of lime. A minimum of 8" of topsoil was also distributed to various locations as needed. These areas were then fertilized, using the hand broadcast method, with the exception of the Reserve Site. The terrain and size of the Reserve Site allowed for the use of a mechanical fertilizer spreader. Hand methods were used due to the steep slopes that were constructed to match surrounding contours. After fertilizer was applied, a six foot disc mixed fertilizer with soil in all areas. Seeding was accomplished with a drill on the Reserve Site, but hand methods were again used on all other sites due to the terrain. After seed was applied to the area, a straw mulch was distributed to the area and a crimping disc was used to push straw into the soil.

The entire area was fenced using a barbed four wire fence. Gates were installed at both ends of each site to allow for the release of any livestock that may enter the area.

4.5 Quantities Used

<u>SITE</u>	<u>ITEM</u>	<u>AMOUNT</u>
Reserve	Pit Excavation and Spread	4,334 CY
Reserve	Coal Slack Removal	3,926 CY
Reserve	Lime Application @ 20 tons/Acre	1.41 AC
Reserve	Topsoil	900 CY
Reserve	Revegetation	6.00 AC
Reserve	4-Wire Fence	7,455 LF

<u>SITE</u>	<u>ITEM</u>	<u>AMOUNT</u>
Salice Roberto	Lime Application @ 20 tons/Acre	0.3 AC
Salice Roberto	Topsoil	500 CY
Salice Roberto	Revegetation	0.70 AC
Salice Roberto	4-Wire Fence	3,205 LF
Sorenson	Lime Application @ 20 tons/Acre	0.27 AC
Sorenson	Topsoil	562 CY
Sorenson	Revegetation	0.83 AC
Sorenson	4-Wire Fence	1,700 LF
Ehlang	Lime Application @ 20 tons/Acre	0.37 AC
Ehlang	Topsoil	631 CY
Ehlang	Revegetation	0.73 AC
Ehlang	4-Wire Fence	1,650 LF

5. P A Y M E N T R E Q U E S T S

5.1 Sample Pay Request

See Attached Example

5.2 Cost Per Site

<u>Site Name</u>	<u>Amount</u>
Reserve	\$42,063.67
Salice Roberto	\$11,074.15
Sorenson	\$10,569.00
Ehlang	\$ 9,753.50

5.3 Total Project Cost

\$73,460.32

PAYMENT REQUEST NO. 1

FROM 10/10/90 TO 11/9/90

PROJECT TITLE: HILL/BLAINE MINE RECLAMATION PROJECT

LOCATION: RESERVE SITE, HILL COUNTY, MT MONT AVE or DSL-AMRB: DSL-AMRB(90-019)

NAME OF CONTRACTOR: MITCHELL BROTHERS INC.

ADDRESS: _____

CHANGE ORDERS			CONTRACT STATUS			
No.	Description	Amount	Total Amount	Completed Amount	Uncompleted Amount	Percent Complete
		\$ 400.00	46,734.01	41,663.67	0	100
Total Change Orders		400.00				
CONTRACT TO DATE INCLUDING CHANGE ORDERS \$ _____			COMPLETED TO DATE \$ 41,663.67			
			PLUS MATERIALS ON SITE \$ - 0 -			
			TOTAL COMPLETED TO DATE \$ 41,663.67			
			LESS RETAINAGE \$ - 0 -			
			TOTAL AMOUNT EARNED TO DATE \$ 41,663.67			
			LESS PREVIOUS PAYMENTS \$ 0			
			AMOUNT DUE THIS PAYMENT \$ 41,663.67			
			LESS 1% TAX \$ 420.64			
			TOTAL DUE CONTRACT \$ 41,643.03			

* For use only when securities are on deposit in lieu of retainage.

TOTAL RETAINAGE \$ _____

SECURITIES ON DEPOSIT \$ _____

ADJUSTED RETAINAGE \$ _____

I certify that this claim is correct and just in all respects and that payment or credit has not been received.

APPROVED BY: _____

MITCHELL BROS INC
Contractor

By: _____

Date: 11/19/90

Owner

By: _____

Date: _____

RECOMMENDED BY:

HKm Associates
Engineer

By: Gra Underhill

Date: 11/21/90

ITEMIZATION OF QUANTITIES AND COSTS

Item	Description	Estimated Plan Quantity	Unit Price Bid	Units of Work Completed To Date	Total Cost of Complete Work	Percent Complete
1.	MULCHIZATION	1	\$2000 ⁰⁰	1	2000 ⁰⁰	100
2	PT EXCAVATION: SPREAD	5800CY	\$1.00	4334	4334 ⁰⁰	100
3	SLACK REMOVAL	7380CY	\$1.00	3926	3926 ⁰⁰	100
4	DEBRIS DISPOSAL	1	\$2000 ⁰⁰	1	2000 ⁰⁰	100
5	ADT / SUBSIDENCE BRKTH	1	\$6700 ⁰⁰	1	6700 ⁰⁰	100
6	LIME APPLICATION	3.85AL	\$1600 ⁰⁰	1.41	2256 ⁰⁰	100
7.	REVEGETATION	455AL	\$1200 ⁰⁰	6.00	7200 ⁰⁰	100
8.	4-WIRE FENCE	6635LF	\$1.663	7455	12,377. ⁶⁷	100
9	TOPSOIL	600CY	\$1.50	900	1350 ⁰⁰	100
TOTAL					41,663. ⁶⁷	

PAYMENT REQUEST NO. 1FROM 10/10/90 TO 11/9/90PROJECT TITLE: HILL/BLAINE MINE REclamation PROJECTLOCATION: SALICE-ROBERTO, HILL COUNTY MONT AVE or DSL-AMRB: DSL-AMRB(90-019)NAME OF CONTRACTOR: MITCHELL BROTHERS INC.

ADDRESS: _____

CHANGE ORDERS			CONTRACT STATUS			
No.	Description	Amount	Total Amount	Completed Amount	Uncompleted Amount	Percent Complete
			8766.30	11,074.15	0	100
Total Change Orders						
CONTRACT TO DATE INCLUDING CHANGE ORDERS \$ _____			COMPLETED TO DATE \$ <u>11,074.15</u>			
			PLUS MATERIALS ON SITE \$ <u>- 0 -</u>			
			TOTAL COMPLETED TO DATE \$ <u>11,074.15</u>			
			LESS RETAINAGE \$ <u>- 0 -</u>			
			TOTAL AMOUNT EARNED TO DATE \$ <u>11,074.15</u>			
			LESS PREVIOUS PAYMENTS \$ <u>- 0 -</u>			
			AMOUNT DUE THIS PAYMENT \$ <u>11,074.15</u>			
			LESS 1% TAX \$ <u>110.74</u>			
			TOTAL DUE CONTRACT \$ <u>10,963.41</u>			
<p>I certify that this claim is correct and just in all respects and that payment or credit has not been received.</p> <p>APPROVED BY:</p> <p>Contractor _____ Owner _____</p> <p>By _____ By _____</p> <p>Date _____ Date _____</p> <p>RECOMMENDED BY:</p> <p>Engineer _____</p> <p>By _____</p> <p>Date _____</p>						

ITEMIZATION OF QUANTITIES AND COSTS						
Item	Description	Estimated Plan Quantity	Unit Price Bld	Units of Work Completed To Date	Total Cost of Complete Work	Percent Complete
1	MOBILIZATION	1	1000 ⁰⁰	1	1000 ⁰⁰	100
2	ADT/SUBSIDENCE BALKH	1	2000 ⁰⁰	1	2000 ⁰⁰	100
3	LIME APPLICATION	0.30 AL	2000 ⁰⁰	0.30 AL	600 ⁰⁰	100
4	TOPSOIL	320 CY	1.50	500 CY	750 ⁰⁰	100
5	REVEGETATION	0.5 AL	2800 ⁰⁰	0.70 AL	1400 ⁰⁰	100
6	DEBRIS DISPOSAL	1	100 ⁰⁰	1	100 ⁰⁰	100
7	A-WIRE FENCE	2200	1.63	3205	5224.15	100
TOTAL					11,074.15	

PAYMENT REQUEST NO. 1FROM 10/10/90 TO 11/9/90PROJECT TITLE: HILL/BLAINE MINE RECLAMATION PROJECTLOCATION: Garminson Site, Blaine Court MONT AVE or DSL-AMRB: DSL-AMRB(90-019)
NTNAME OF CONTRACTOR: MITCHELL BROTHERS INC.

ADDRESS: _____

CHANGE ORDERS			CONTRACT STATUS			
No.	Description	Amount	Total Amount	Completed Amount	Uncompleted Amount	Percent Complete
			11,673. ³⁰	10,569. ⁰⁰	0	100
Total Change Orders						
CONTRACT TO DATE INCLUDING CHANGE ORDERS \$ _____			COMPLETED TO DATE \$ <u>10,569.⁰⁰</u>			
			PLUS MATERIALS ON SITE \$ <u>- 0 -</u>			
			TOTAL COMPLETED TO DATE \$ <u>10,569.⁰⁰</u>			
			LESS RETAINAGE \$ <u>- 0 -</u>			
			TOTAL AMOUNT EARNED TO DATE \$ <u>10,569.⁰⁰</u>			
			LESS PREVIOUS PAYMENTS \$ <u>- 0 -</u>			
			AMOUNT DUE THIS PAYMENT \$ <u>10,569.⁰⁰</u>			
			LESS 1% TAX \$ <u>105.⁶⁹</u>			
			TOTAL DUE CONTRACT \$ <u>10,463.³¹</u>			
* For use only when securities are on deposit in lieu of retainage. TOTAL RETAINAGE \$ _____ SECURITIES ON DEPOSIT \$ _____ ADJUSTED RETAINAGE \$ _____						

I certify that this claim is correct and just in all respects and that payment or credit has not been received.

APPROVED BY:

Contractor

Owner

By _____

By _____

Date _____

Date _____

RECOMMENDED BY:

Engineer

By _____

Date _____

ITEMIZATION OF QUANTITIES AND COSTS						
Item	Description	Estimated Plan Quantity	Unit Price Bid	Units of Work Completed To Date	Total Cost of Complete Work	Percent Complete
1	MOBILIZATION	1	1000 ⁰⁰	1	1000 ⁰⁰	100
2	ADIT/SUBSIDENCE BACKFILL	1	3250 ⁰⁰	1	3250 ⁰⁰	100
3	DEBRIS DISPOSAL	1	250 ⁰⁰	1	250 ⁰⁰	100
4	LIME APPLICATION	0.45 AC	2000 ⁰⁰	0.27	540 ⁰⁰	100
5	TOPSOIL	550 CY	1.50	562	843 ⁰⁰	100
6	REVEGETATION	10.70 AC	2000 ⁰⁰	0.83	1660 ⁰⁰	100
7	A-WIRE FENCE	1935 LF	1.78	1700	3306 ⁰⁰	
TOTAL					8,569 ⁰⁰	

PAYMENT REQUEST NO. 1

FROM 10/10/90 TO 11/9/90

PROJECT TITLE: HILL/BLAINE MINE REclamation PROJECT

LOCATION: EMERGENCY SITE, BLAINE COUNTY, MT MONT AVE or DSL-AMRB: DSL-AMRB/90-019

NAME OF CONTRACTOR: MITCHELL BROTHERS INC.

ADDRESS: _____

CHANGE ORDERS			CONTRACT STATUS			
No.	Description	Amount	Total Amount	Completed Amount	Uncompleted Amount	Percent Complete
			10,873. ³⁰	9753. ⁵⁰	0	100
Total Change Orders						
CONTRACT TO DATE INCLUDING CHANGE ORDERS \$ _____			COMPLETED TO DATE \$ <u>9753.⁵⁰</u>			
			PLUS MATERIALS ON SITE \$ <u>- 0 -</u>			
			TOTAL COMPLETED TO DATE \$ <u>9753.⁵⁰</u>			
			LESS RETAINAGE \$ <u>- 0 -</u>			
			TOTAL AMOUNT EARNED TO DATE \$ <u>9753.⁵⁰</u>			
			LESS PREVIOUS PAYMENTS \$ <u>- 0 -</u>			
			AMOUNT DUE THIS PAYMENT \$ <u>9753.⁵⁰</u>			
			LESS 1% TAX \$ <u>97.⁵⁴</u>			
			TOTAL DUE CONTRACT \$ <u>9655.⁹²</u>			
* For use only when securities are on deposit in lieu of retainage.						
TOTAL RETAINAGE \$ _____						
SECURITIES ON DEPOSIT \$ _____						
ADJUSTED RETAINAGE \$ _____						

I certify that this claim is correct and just in all respects and that payment or credit has not been received.

APPROVED BY:

Contractor

Owner

By _____

By _____

Date _____

Date _____

RECOMMENDED BY:

Engineer

By _____

Date _____

ITEMIZATION OF QUANTITIES AND COSTS

Item	Description	Estimated Plan Quantity	Unit Price Bid	Units of Work Completed To Date	Total Cost of Complete Work	Percent Complete
1.	Mobilization	1	1000 ⁰⁰	1	1000 ⁰⁰	100
2	ADIT/SUBSIDENCE PATCH	1	2750 ⁰⁰	1	2750 ⁰⁰	100
3	DEBRIS DISPOSAL	1	250 ⁰⁰	1	250 ⁰⁰	100
4	LIME APPLICATION	0.70 AC.	2000 ⁰⁰	0.37	740 ⁰⁰	100
5	TOPSOIL	860 C.Y.	1 ⁵⁰	631	946 ⁵⁰	100
6	REVEGETATION	1.0 AC.	2000 ⁰⁰	0.73	1460 ⁰⁰	100
7	4-WIRE FENCE	138 SLF.	1 ⁵⁰	1650	260 ⁰⁰	100
TOTAL					9753 ⁵⁰	

6. PROJECT SUMMARY

6.1 Summary of Project

Reclamation construction began on the Reserve Site on October 10, 1990. The construction of this site was finished in approximately two weeks. The only problem encountered was the delay of one week in the delivery of lime. Due to this delay, fencing began prior to the revegetation process. This allowed for the fence to be completed at approximately the same time the site was revegetated. This site was the largest of the four sites to be reclaimed. Delays due to equipment breakdown were minimal.

The Salice Roberto mine site was located within a mile of the Reserve Site. The reclamation of this site was completed on the same date as the Reserve Site. This site was small and no problems or delays were encountered during the reclamation.

Reclamation of the Sorenson Site was accomplished by using the coal slack from the slack pile to fill all subsidence holes in the area. Three natural springs exist around the adit. These springs originated in existing brush areas and join at a point on the north end of the coal slack pile. The springs allowed for water to flow under the coal slack pile. The last one-third of this pile was extremely soft, causing problems in equipment maneuverability.

The Ehlang Site was similar in size to the Salice Roberto site. Reclamation was completed in one day with no problems or delays encountered.

6.2 Site Condition After Completion

All sites were in good condition following the completion of the reclamation. Weather conditions during construction were dry, this allowed for a minimal disturbance to the access roads used during construction. Straw mulch was still visible during the final inspection. Due to the natural windy climate of the area, the retention of the straw is a concern.

6.3 As-Built Drawings

As-Built Drawings follow in the next three pages.

6.4 Maintenance or Follow-up

An eleventh month inspection will be conducted by Greg Underhill and Dale Herbort. The inspection will allow evaluation of the revegetated and backfilled areas. Areas of excessive erosion or subsidence will be noted and if deemed necessary, the contractor will be required to repair these areas.

7. COMMENTS/SUGGESTIONS

The Hill/Blaine abandoned mine reclamation project was completed by a contractor who is from another county of Montana. Mitchell Brothers, Inc. was able to employ local people for fencing and the revegetation process. Mitchell Brothers, Inc. constructed this project using one of the basic founding principles behind the development of the Abandoned Mine Land Program. Mitchell Brothers, Inc. could well have done all the work themselves, but choose to employ local people, subsequently putting money back into Hill and Blaine counties.

8. P H O T O G R A P H S

8.1 Listing

- 8.1.1a BEFORE: Old existing buildings adjacent to main drainage channel that was destroyed on the Reserve Site. October 16, 1990.
- 8.1.1b DURING: Destruction of old building on the Reserve Mine Site, to be buried in pit. October 16, 1990.
- 8.1.1c DURING: Buildings removed and the area is ready for revegetation on the Reserve Mine Site. October 18, 1990.
- 8.1.1d AFTER: Following completion of the reclamation in the area of 8.1.1a. November 9, 1990.
- 8.1.1e DURING: Coal slack pile and adit areas that were existing along the west coulee on the Reserve Site. October 17, 1990.
- 8.1.1f DURING: Removal of coal slack in the area describe in Photo 8.1.1e. October 17, 1990.
- 8.1.1g AFTER: Finished reclamation in the west coulee on the Reserve Site. October 31, 1991.
- 8.1.1h AFTER: Finished reclamation of the north end of the west coulee on the Reserve Site. October 31, 1991.
- 8.1.2a BEFORE: Existing conditions on the Salice Roberto Mine Site prior to reclamation. October 9, 1990.
- 8.1.2b BEFORE: Existing terrain on the Salice Roberto Mine Site. October 17, 1990.
- 8.1.2c DURING: Largest adit being reclaimed on the Salice Roberto Mine Site. October 17, 1990.
- 8.1.2d AFTER: Reclaimed adit of the Salice Roberto Mine Site. November 9, 1990.
- 8.1.3a BEFORE: Existing conditions on the Sorenson Mine Site prior to reclamation. October 9, 1990.
- 8.1.3b BEFORE: Existing coal slack pile on the Sorenson Mine Site. November 2, 1990.

- 8.1.3c DURING: Leveled coal slack pile on the Sorenson Mine Site. November 3, 1990.
- 8.1.3d AFTER: Coal slack pile reclaimed and adit on the Sorenson Mine Site. November 3, 1990.
- 8.1.3e AFTER: Reclaimed area after the coal slack pile was removed on the Sorenson Site. November 3, 1990.
- 8.1.4a BEFORE: Existing conditions on the Ehlang Mine Site prior to reclamation. July 26, 1990.
- 8.1.4b DURING: Ehlang Mine Site during the lime application process. July 26, 1990.
- 8.1.4c AFTER: Reclaimed Ehlang Mine Site. July 26, 1990.

8.2. Photo Location Map

This item has been left out intentionally.

8.3 Photos/Slides

Narratives and photographs follow as pages 24 through 29a.



BEFORE CONSTRUCTION

Old existing buildings adjacent to main drainage channel that were destroyed on the Reserve Site.

PHOTO TAKEN: October 16, 1990

8.1.1a

DURING CONSTRUCTION

Destruction of old buildings on the Reserve Site, to be buried in pit.

PHOTO TAKEN: October 16, 1990

8.1.1b

DURING CONSTRUCTION

Buildings removed and area is ready for revegetation on the Reserve Site.

PHOTO TAKEN: October 18, 1990

8.1.1c

AFTER CONSTRUCTION

Following completion of the reclamation in the area of Photq 8.1.1a.

PHOTO TAKEN: November 9, 1990

8.1.1d



DURING CONSTRUCTION

Coal Slack pile and adit areas that were existing along the west coulee on the Reserve Site.

PHOTO TAKEN: October 17, 1990

8.1.1e

DURING CONSTRUCTION

Removal of coal slack in area described in Photo 8.1.1e.

PHOTO TAKEN: October 17, 1990

8.1.1f

AFTER CONSTRUCTION

Finished reclamation in the west coulee on the Reserve Site.

PHOTO TAKEN: October 31, 1990

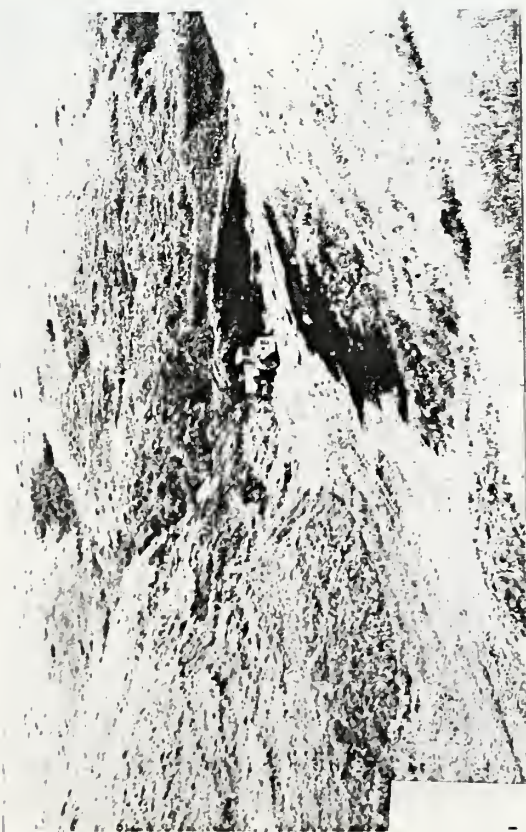
8.1.1g

AFTER CONSTRUCTION

Finished reclamation of the north end of the west coulee on the Reserve Site. October 31, 1990.

PHOTO TAKEN: October 31, 1990

8.1.1h



1-800-421-4662
STOCK # PPV84

BEFORE CONSTRUCTION

Existing conditions on the Salice Roberto Mine Site prior to reclamation.

PHOTO TAKEN: July 26, 1990

8.1.2a

BEFORE CONSTRUCTION

Existing terrain on the Salice Roberto Mine Site.

PHOTO TAKEN: October 17, 1990

8.1.2b

DURING CONSTRUCTION

Largest adit being reclaimed on the Salice Roberto Mine Site.

PHOTO TAKEN: October 17, 1990

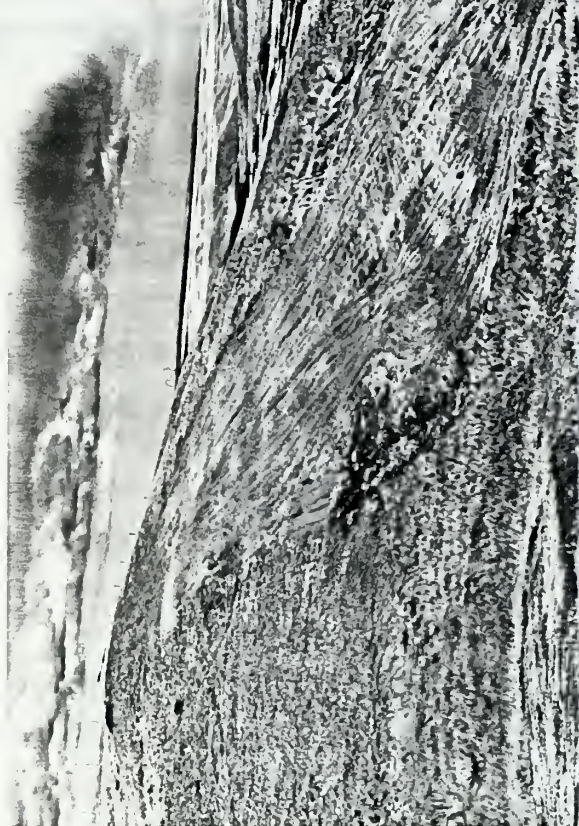
8.1.2c

AFTER CONSTRUCTION

Reclaimed adit of the Salice Roberto Mine Site.

PHOTO TAKEN: November 9, 1990

8.1.2d



BEFORE CONSTRUCTION

Existing conditions on the Sorenson Mine Site prior to reclamation.

PHOTO TAKEN: July 26, 1990

8.1.3a

BEFORE CONSTRUCTION

Existing coal slack pile the Sorenson Mine Site.

PHOTO TAKEN: November 2, 1990

8.1.3b

DURING CONSTRUCTION

Leveled coal slack pile on the Sorenson Mine Site.

PHOTO TAKEN: November 3, 1990

8.1.3c

AFTER CONSTRUCTION

Coal slack pile reclaimed and adit on Sorenson Mine Site.

PHOTO TAKEN: November 3, 1990

8.1.3d



AFTER CONSTRUCTION

Reclaimed area of the coal slack pile 6
was removed on the Sorenson Mine Site.

PHOTO TAKEN: November 3, 1990

8.1.3e

1-BCC-421-1562
STOCK # PPV84



BEFORE CONSTRUCTION

Existing conditions on the Ehlang Mine Site prior to reclamation.

PHOTO TAKEN: July 26, 1990

8.1.4a

DURING CONSTRUCTION

Ehlang Mine Site during the lime application process.

PHOTO TAKEN: November 4, 1990

8.1.4b

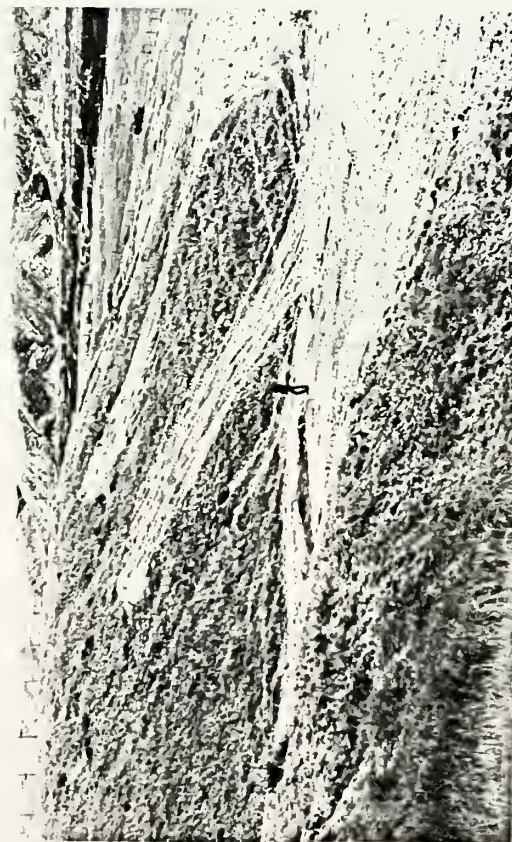
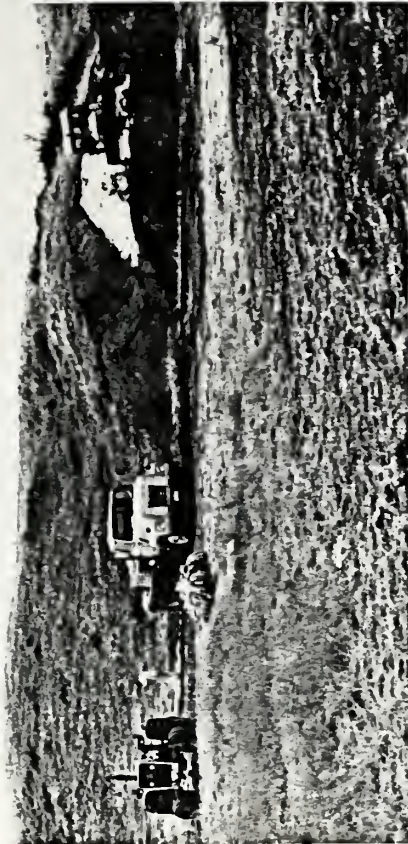
AFTER CONSTRUCTION

Reclaimed Ehlang Mine Site.

PHOTO TAKEN: November 4, 1990

8.1.4c

1-800-421-4362
STOCK # PPV94



APPENDIX A
DAILY REPORTS

9.1 Daily Inspection Reports

DAILY INSPECTION REPORT
HKM ASSOCIATES

PROJECT HILL/BLAINE AMR PROJECT NO. EM186112
DATE 10/10/90 TIME COVERED 7:15 A.M. TO 7:30 P.M.
CONTRACTOR MITCHELL BROS SUPERINTENDENT TERRY MITCHELL
WEATHER Cold, WINDY 15-20 MPH, 35-40° TEMPERATURE Max. 40°F Min. 35°F
CLOUDY, SOME RAIN & SNOW

NARRATIVE

Greg Underhill, Polo Herbert (STATE) and myself arrived on-site (RESERVE) at 7:15 A.M. Rich (MITCHELL BROS) is staying on-site in a camper, therefore he met us. The remaining 3 MITCHELL BROS employees arrived at 7:20 A.M. We all walked the length of the site. Greg explained ~~that~~^{some} reclamation techniques were expected. He explained the ~~importance~~^{importance} of 85% compaction. Greg told Terry Mitchell that there might be a need for some kind of water hauling vehicle if dust control became a problem. Greg explained the method of digging at least 3' down in all subsidence holes to ensure no further collapse after backfilling. We showed Mitchell Bros all of the areas that needed attention. Greg and Terry found an active Rattus muskane den on Southwest side of the site. This was in an old adit. Greg and I left site at 9:30 to get copies made so Greg could go back to HKM. Polo Herbert remained on-site for the duration of my absence. I returned to site at 11:00. Pit #1 was underway and Adit #1 on Southwest side had been opened for my inspection. I inspected adit and instructed Kuth to that backfilling of this adit was OK. Coal stack pile adjacent to pit #1 was estimated by me to be 150' x 30' x 4'. With this quantity the constructed 60' x 30' x 3' pit #1 was not adequate for coal stack. Terry expanded the pit to 82' x 64' x 4.5'. This pit was filled with ≈ 389 Cu. YD at day's end. Kuth began collapsing Adit #3, located on point of hill in the Northern part of site. This adit looks to extend quite a long distance up the slope. More will be completed here on 10/11/90. I wanted to check quantities w/Terry at day's end. He told me that "he considered quantities to be the inspectors job." I left site at 7:10 P.M. Polo Herbert left site at 3:00 P.M.

Rich J. Esten

INSPECTOR

DAILY INSPECTION REPORT
HKM ASSOCIATES

PROJECT HILL/BLAINE AMR PROJECT NO. 8M186.11Z
DATE 10/11/90 TIME COVERED 7:15 A.M. to 6:30 P.M.
CONTRACTOR MITCHELL BROS INC. SUPERINTENDENT TERRY MITCHELL
WEATHER Cold, WINDY, CLOUDY, Spitting Snow. Cleared around 5:00 P.M. TEMPERATURE Max. 33 Min. 38

NARRATIVE

I arrived on-site at 7:30 A.M. Mitchell Bros working, Scooper and loader, to finish filling Pit #1. Method was to have loader push stick into drainage ~~and~~ ^{then} scooper picks it up and delivers it to pit. This coal stick is wet and is somewhat mixed with the bentonite soil. A slow spring ~~is~~ developed around 10:00 in this area. The coal stick removal was finished here in at 1:00.

Terry finished Pit #2, final dimensions; 58x47x5.0. This pit is up against Adit #2. Coal removal at adjacent pile began and was 50% complete by days end.

Krohn began to investigate subsidence holes on northern part of project in the early afternoon. I was present during this operation to make sure we fill all holes that developed. This was being done with the backhoe and due to space and machine limitations old spoil was being thrown in trench behind hoe. I spoke to Krohn ~~of~~ about the compaction requirements and he assured me that Dozer ~~was~~ would remove spoil and ~~re~~ fill re-fill trench. Krohn wanted me to show him all of the subsidence holes that needed to be filled. I showed him most, but explained that I wasn't sure about a few. There are many holes on this slope, North being, that are not shown on plans and weren't covered during ~~from~~ ^{from} Wednesday's walk thru of project with Greg. I will call Greg first thing Friday A.M.

I stressed the importance of getting the \$400⁰⁰ check to Mr. Whalen. He assured me that it would be done on Saturday 10/13/90 when his wife brought the ~~the~~ check books.

Montana Department of State lands helicopter flew over the site 3-times at 3:15 P.M. The helicopter didn't set down.

Krohn was gone from site from 8:30 to 10:30 to get Line SUPPLIER organized down Mr. Company. He also arranged for fuel truck to be on site at 9:30.

Frank J. Estes

INSPECTOR

DAILY INSPECTION REPORT
HKM ASSOCIATES

PROJECT HILL/BLAINE AHR PROJECT NO. 8M186.11Z
DATE 10/12/90 TIME COVERED 8:15 TO 5:20
CONTRACTOR MITCHELL BRO'S SUPERINTENDENT TERRY MITCHELL
WEATHER WINDY 35-50MPH SUSTAINED TEMPERATURE Max. 67 38 Min. 68 38
Cloudy, WARM

NARRATIVE

I arrived on-site at 8:15 due to my trying to contact Greg Underhill in HKM Billings office. I had some questions, but Greg was out. On my way to site I met Kieth Mitchell going into HAVER.

LOADER: Dozer busy when I ARRIVED finishing removing coal slick PILE adjacent to PIT #2. Scraper was just getting started spreading topsoil on PIT #1 and adjacent former slick pile. I measured the area when finished to be able to keep track of vegetation area. Access rd. through site will be calculated (Area) at end of day to keep everything straight.

At 9:30 TERRY and myself went to the north side of site to figure out coal slick removal on NE corner of site. We decided that 3 pit Adjacent to Adit #3 would be the best. This would make for a long haul, but no other seemed better. This meant that Terry had to build 3 Temp. creek x-rings. Dozer built x-rings and returned to finish PIT #2. Scraper then started stripping topsoil from PIT #3 location. Topsoil in this area is $\approx 8"$ thick. Scraper is piling topsoil at North and East edges of Adit #3. Scraper continued to dig on PIT #3 until 4:30 when he moved to begin PIT #4 up-slope from old buildings.

Kieth returned to site at 10:00 and told me that he would have another employee here to work on Sunday AM. Kieth finished stripping topsoil and brush from subsidence holes on top of slope then began on subsidence hole adjacent to Access to pit #3. Backhoe pushed adequate material into open Adit #4 but couldn't get to subsidence hole above.

I returned to HAVER at 5:20 and called Greg at home to fill him in on process and asked about lime application. He said he needed to speak to Ross Whipple to determine if an existing coal slick area that is covered to needs lime.

Frank J. Edin

INSPECTOR

DAILY INSPECTION REPORT
HKM ASSOCIATES

PROJECT HILL / BLAINE AREA PROJECT NO. _____
DATE 10/13 TIME COVERED 7:30 to 10:30
CONTRACTOR MITCHELL Bro's SUPERINTENDENT TERRY MITCHELL
WEATHER Windy, Cool, Clear TEMPERATURE Max. 50 Min. 35

NARRATIVE

I arrived on-site at 7:30 and MITCHELL Bro's were on site. I explained to Terry the need for topsoil on area adjacent to Pit #2. This topsoil will need to be borrowed from Signified AREA.

I walked thru the remaining part of the site to show the pits that needed to be filled. I also instructed Terry to move Pit #4 up the slope from where it was started yesterday.

Summary: Digger deepening Pit #3 to provide room for Coal from NE AREA. Loader filling Subsidence holes w/Slack from piles adjacent to and across from Pit #3. Terry said that today will be filling Pit #3 and Blake would remove brush and topsoil from Subsidence holes. Keith left site for supplies at 9:00. I left site 10:30

Rich J. Estes

INSPECTOR

10/14/90

Reserve SHC

Keith said lime will be delivered in 50 lb bags. I told him we could measure ground and then spread the lime according to the # of bags needed per acre to obtain proper application rates. Keith left at approximately 3:45. I examined the work done on site, took pictures and called quantities. I kept the site at 5:00.

Terry said they would like to start fencing in some areas while waiting for the equipment to be repaired. I told him I would help them lay out the fence corners.

7:00 pm called Russ to see if CaCO₃ sample from Monroe Co. lim had been delivered to us. It had not. Keith said he wants the lime approved by H&M before it is delivered.

I also called the weights. work will be out tomorrow A.M. to provide him input for fencing.

10/15/70

Reserve Site

Greg Vachell

Cool Clear no wind

7:30 I arrived on site. Mitchell Bros. not here yet. I estimated quantity of slack P.L. B Area 3: $30' \times 15' \times 27' = 3048'$ Edge roll #1-14

8:30 Crew on site: Terry M., Sid S., Rich and Perry Mitchell.

Dinner working on buried pit #4 opposite to Perry - Terry asked that I go over the fencing layout for Area 1 with him in the evening start fencing. Keith is still in town trying to get the section Transmission lined and urgent for the Golden.

8:45 I went on quadrize with Terry as far as Pit #3 Execution quantities and stake quantities placed in pit at this time. He said he has not estimated any quantities but said the quantities seemed reasonable.

10/15/70

William's Site

205-5458-7583 (hwy)

9:00 AM WIDE with 1/2 arrived on site at Area 1, I talked him his electric as far as fencing went. He said he would like at least one gate in each enclosure. He did not care if we put gates in the road areas. He also suggested that the fence would hold up better if it were placed on the ridge type surrounding the sites instead on the side hills. I told him we would try and place the fence on the ridge tops as much as we could. I also told him we would put 2 gates in Area 1, 2 gates in Area 2, 1 gate Area 3 and 3 gates Area 4.

9:30 I hired out Terry and crew and left for town to call Ross and get Cath to stake the fence line. I called Ross the same and quadrize has arrived 80% passing 100 sieve we need 100% passing 100 sieve or must make up difference in application rate.

10/15/96

11:00 Buck on site, Terry, Sid and Rich are placing Posts. Keith is apparently still in town with Schagen Transmission. I told Terry about the sample quantities and that he & Keith should talk to the Soglian as soon as possible so they are not delayed waiting for him. Terry said as long as they can keep away froming etc. he is not worried about it.

12:15 Keith arrived on site with parts for 4-500T, Transmission is still being worked on in Haver, I told Keith about wire. He plans on going back to town at 3:00 and calling Montana Column about it.

Doren has completed Pit #4 excavation. I told Terry that after debris is placed and compacted in pit #4 I will then measure the pit from the top of the debris to determine pit excavation payment quantity. Excavation of the portion of the pit for the debris is paid under lump sum for debris disposal.

1:00 Loader AGG repaired and crew are waiting on debris removal. Keith and I drove to Duysa Sargeants farmstead and inspected the straw to be used as mulch. It is wheat straw, by the 10 mil or greater. Should make excellent mulch. I then examined Keiths auger and it appears acceptable to me.

2:30 Both AGG and 680E being utilized for debris removal covering debris in Pit #4 and also utilizing material from Pit #1. Fill various cells ^{partially}

Stack Pile C: quantity estimate $30 \times 72 \times 5/27 = 400 yd^3$

Stack Pile D: $(25 \times 100 \times 5)/27 = 463 yd^3$

Stack Pile E: $(30 \times 85 \times 5)/27 = 377 yd^3$

1:00 Doren moves to finish back filling and contouring pit #4.

10/15/00

Pit #4 Excavation

150'

11.7

W = 21.5

Pit is excavated after stabilization + compaction of debris

Station	width	Depth	Area	Average Volume
0+00	21.5	0	0	48.28
0+42	21.5	4.5	96.75	2,031.76
0+72	21.5	7.0	150.5	3,708.75
0+97	21.5	9.5	204.25	4,434.50
1+22	21.5	7.5	161.25	4,568.75
1+50	21.5	0	0	2,257.0
				17,006

$$17,006 / 27 = 629.9 \approx 630 \text{ yd}^3$$

Loaders and Dozer move buildings and other debris into pit #4 and compact

Go to Quit for Day

debris disposal 90% complete

pit #4 excavation = 630 yd³

DOT and Subsidize hole closure 70% complete

DAILY INSPECTION REPORT
HKM ASSOCIATES

PROJECT Hill / Blaine AMR - Reserve Site PROJECT NO. 8m186.112
DATE Oct 16 1990 TIME COVERED 7:30 to 6:30
CONTRACTOR Keith Mitchell SUPERINTENDENT Terry Mitchell
WEATHER Cal, Calm, Clear TEMPERATURE Max. _____ Min. _____

NARRATIVE

All personnel on site at 7:30. Keith informed me he will order lime today. I told him I had talked to Ross and that Montana Limestone guaranteed the lime would pass our specification. Keith left for town to work on scraper transmission. Terry and Sid placing posts for fence corners. Perry operating Dozer, pushing slack into pit #3 from below adit #3. Total slack removed $\approx 20 \text{ yd}^3$. Rich operating A66 loader, slack removed from Pile B area 3 into Pit #3. Slack removed $\approx 30 \text{ yd}^3$.

9:45 Dozer backfilling trench adjacent to adit 4 and other ditches and subsidence holes.

1:45 Dozer & GPOE backhoe move to northeast area slack piles D & E and begin excavating Pit #5

3:26 Keith arrives with Transmission. Terry, Keith & Rich begin installing

5:15 Transmission in. Sid greasing scraper. Terry, Rich filling remaining subsidence holes.

I spent most of the day measuring areas for lime and vegetation quantities.

Keith informed me that he paid Robert Warden the \$400.00. Keith also told me that he ordered 72 tons of lime which should be delivered wed or thurs.

6:30 Quit for day

- measured vegetation quantities for total job:

lime 2.5 Ac

herb 6.0 Ac

- Slack removal 50 yd^3

- Pit #5 excavation in progress

will measure tomorrow when excavation complete

Steve (J) Lehill

INSPECTOR

**DAILY INSPECTION REPORT
HKM ASSOCIATES**

OBJECT 14.11 / Blaine Reserve Site PROJECT NO. Em186.112 804
DATE Oct 17, 1990 Page 1 TIME COVERED 7:45 to 1:30 see next page
CONTRACTOR Mitchell Bros. SUPERINTENDENT Terry Mitchell
WEATHER Cool, Clear Trace of Snow TEMPERATURE Max. 60 Min. 39
in morning, dry in afternoon

NARRATIVE

7:45 I arrived on site to find the crew working to free the fencing track that got stuck at quitting time. Perry said he had finished excavating pit #5 so I measured the sidehill pit. Calculations are in field book. Total Pit Excavation = 594 yd^3 . The final pit side slopes after back filling will be projected to be 3 to 1 so final back fill volume = 684 yd^3 .

They got the Scaper running and commenced with slack removal from slack pile A into pit 3. Slack removal = 100 yd^3

The dozer also worked on the pile. The pile is essentially completely removed and will require only minor grading before lime and topsoil.

A small channel will be constructed at base of pile to carry drainage to main flow line. The dozer then moved to pit #5. To begin dozing slack into pit I will wait until the pit is completely full before calculating slack removal quantities for the even. I instructed Perry that we will need at least 2 feet of cover over this side-hill slack pit and that we need good compaction of the slack.

11:45 Perry dozing slack, said using ^{Scaper} loader to move slack from pile into pit #4. I will measure this pit when backfill is completed. Terry & Rich fencing. I left for town to call Ross regarding lime. Ross informed me that the most recent limestone samples for Foster & Smith inc did not meet spec. Also the CaCO_3 was only 88.1%. I told Keith to call mt. Limestone and inform them that we are going to sample the load upon arrival and we will reject it if it does not meet spec we will accept 95% CaCO_3 .

1:30 I returned to site to find the Scaper broken down again. Transmission pump out. Perry was still dozing slack into pit #5. It appears as the all slack from piles D & E will fit. The moisture content of the slack is allowing for excellent compaction.

Greg Underhill

INSPECTOR

see next page also

DAILY INSPECTION REPORT
HKM ASSOCIATES

OBJECT 4.11 / B/kine PROJECT NO. _____
DATE Oct 17, 1990 Page 2 TIME COVERED 1:30 - 6:30
CONTRACTOR _____ SUPERINTENDENT _____
WEATHER _____ TEMPERATURE Max. _____ Min. _____

NARRATIVE

4:30 Keith arrived on site and informed me that he had contacted
Mtn Limestone and told them we will test the lime on-site.
They supposedly took note of this. Keith has hired a truck to
deliver the lime in 50^{lb} bags and it should arrive Friday
morning. The seed, ~~should~~ and fertilizer should also arrive at
that time. I went over the liming procedure with Keith
(spread + incorporate). I also went over the revegetation
procedure. Spread fertilizer, incorporate with disc, seed
mulch and crimp. He is well familiar with the operation
and I have great confidence he will follow the specifications
without deviation. I then gave Keith a ride to town at about
5:30 the crew worked until 6:30.

On the way to town we met Terry who said they need a
pump for the transmission. Keith was going to drive to Put Bank
to get one.

Pit Excavation 594 yd³
Slack removed 100 yd³

Greg (Helm) INSPECTOR

1/2

DAILY INSPECTION REPORT
HKM ASSOCIATES

PROJECT 11.11/Blaine Reserve Site PROJECT NO. 8m/86.112
DATE Oct 18, 1990 TIME COVERED 7:45 - 4:30 see Sheet 2
CONTRACTOR Mitchell Bros. SUPERINTENDENT Terry Mitchell
WEATHER Clear + Warm some wind TEMPERATURE Max. 60° Min. 40°
(60°)

NARRATIVE

7:45 I arrived on site. Terry using backhoe for adit excavation (Adit #13). Sid + Rich fencing. Perry Dazing Slack into Pit #5.

After examining the disturbed areas and terrain, it appears to me that it is more practical to enclose Areas 2, 3 and 4 within one fencing area. I walked over the eastern edge of the site with Sid and delineated the fence alignment. I spent the majority of the day staking and measuring fence line.

I showed Terry where an old wooden bridge and other debris were slightly downstream of the site. I instructed him to pick this up and place it in pit #4. I also instructed him to construct a channel in area 3 utilizing scattered rocks as a rock drop.

2:00 Keith arrives with the Scraper transmission. Keith informed me that he had talked to Mt. Limestone. Supposedly, their plant is down and they cannot supply the lime until Tuesday. We believe the main reason for the delay is that they must produce the lime necessary to meet spec. The crew took per lunch. I continued to stake and measure fence line.

2:30 Scraper up and running placing Slack from piles C + F into pit #4. dozen or this also. I took Terry to Salvo Roberto site and showed him what needed to be done. Saw seven rattlesnakes around the large adit and subsidence hole above it.

4:30 Back at Reserve Site Terry + Rich using loader + back hoe to pick up wooden bridge and debris. Perry has completed Slack removal of piles D + E into pit #5. There will be still some cleanup of these areas before they are ready for liming.

INSPECTOR

DAILY INSPECTION REPORT
HKM ASSOCIATES

PROJECT Hill/Bline Reserve Site PROJECT NO. Fm186.112
DATE Oct 17, 1950 CONT. TIME COVERED 4.30 - 6.00
CONTRACTOR _____ SUPERINTENDENT _____
WEATHER _____ TEMPERATURE Max. _____ Min. _____

NARRATIVE

Generally, all slack has now been picked up and
placed in pits. That remaining will be limited and
covered with a minimum of 12 inches of suitable
cover.

Total fence (not completed)	Area 1	1 in ft
for project	Areas 2, 3 & 4	1 in ft

Greg Vardell

INSPECTOR

DAILY INSPECTION REPORT
HKM ASSOCIATES

PROJECT H.11/Blaine Reserve Site PROJECT NO. 8m189.112
DATE Oct 19, 1990 TIME COVERED 7:30 - 6:00
CONTRACTOR Mitchell Bros SUPERINTENDENT Terry Mitchell
WEATHER Cool, Clear TEMPERATURE Max. 55 Min. 40

NARRATIVE

~~Site~~ Site visit with Dale Harbort
Mitchell Bros start work on Salice Roberts
Two men, Sid + Rich, continue fencing on Reserve Site
See Daily Note Book for Details

INSPECTOR

10/10/19

Recurve Site

(16)

8:15 I arrived on Site. Sid + Rich are forcing. Terry, Perry and Keith are moving equipment over to Saline (Pebble) Site where they will work today. Dale Herbst is also on site.

Dale and I walked over the Site and I explained what operations were taking place. I told him that Mitchell was waiting for him before he could backfill the pits and some of the acclits.

We walked over the entire site. Dale had no concern with anything in particular and made no requests to change anything. I told him that we are leaving well vegetated slack in place and he agreed that this was good practice. I showed him adit 12 and explained that the small subsidence holes at the head of the trench acted as detention ponds for the two

channels that flow into the Sunde where adit 12 is located. The subsidence holes are completely settled out and one large hole has been excavated and backfill. I explained that we are leaving the trench because it is well vegetated and stable and that I was hesitant to excavate the subsidence holes and trench because it would allow them to become subject to erosion. Dale agreed with this reasoning.

We then drove over to the Saline Pebble Site where work was in progress.

DAILY INSPECTION REPORT
HKM ASSOCIATES

PROJECT HILL/BLAINE AMR PROJECT NO. BM186.112
DATE 10/22/90 TIME COVERED 3:30 TO 5:00
CONTRACTOR MITCHELL BRO'S SUPERINTENDENT TERRY MITCHELL
WEATHER CLOUDY, WINDY, COOL TEMPERATURE Max. 55 Min. 50

NARRATIVE

I arrived on-site at 3:30 due to I was just getting back in town. CREW WAS drilling and setting PANELS FOR FENCE.

INSPECTOR

DAILY INSPECTION REPORT
HKM ASSOCIATES

PROJECT HILL/BLAINE AMR PROJECT NO. 84186.112
DATE 10/22/90 TIME COVERED 3:30 TO 5:00
CONTRACTOR MITCHELL BRO'S SUPERINTENDENT TERRY MITCHELL
WEATHER CLOUDY, WINDY, COOL TEMPERATURE Max. 55 Min. 50

NARRATIVE

I arrived on-site at 3:30 due to I was just getting back in town. Crew was drilling and setting panels for fence.

INSPECTOR

DAILY INSPECTION REPORT
HKM ASSOCIATES

PROJECT HILL/BLAINE AMR PROJECT NO. BM186.112
DATE 10/23/90 TIME COVERED 7:30 TO 5:30
CONTRACTOR MITCHELL BRO'S SUPERINTENDENT TERRY MITCHELL
WEATHER CLEAR, WARM TEMPERATURE Max. 67 Min. 38

NARRATIVE

I arrived on-site at 7:30. KHADE KEHELY and his FATHER WERE ON-SITE. KHADE IS USING HIS FARM-HANDS to help MITCHELL BRO'S drive steel posts. KHADE, RICH, and KIETH driving steel posts on flat areas with FARMHAND. TERRY and SID driving posts on SLOPES. TERRY and KIETH explained that LIME would be on-site at 8:00 A.M. 10/24/90.

KIETH INFORMED ME THAT MITCHELL BRO'S WERE GOING to go home, to Alondive, on Friday P.M. until Monday. He hoped to have LIME spread to enable revegetation to take place while they are gone. I called Greg Linduhill to explain this situation. I told Greg that I was staying here over weekend due to revegetation.

I think that topsoil for LIME cover is going to be a problem on the reserve site. I will elaborate more on this in next few days.

I left site at 5:30.

INSPECTOR

DAILY INSPECTION REPORT
HKM ASSOCIATES

PROJECT HILL/BLAINE AMR PROJECT NO. 8M186.112
DATE 10/24/90 TIME COVERED 7:30 TO 6:15
CONTRACTOR MITCHELL BRO'S SUPERINTENDENT TERRY MITCHELL
WEATHER WINDY, 15-35MPH, WARM, CLEAR TEMPERATURE Max. 75 Min. 35

NARRATIVE

I arrived on-site, in front of Kieth, Terry, Sid and 2 trucks of Lime at 7:30 A.M. Wind was starting to blow when Lime pallets were unloaded. Total Lime on-site equal to 49.5 TON. 25 TON will be on-site Tuesday 10/30. This should be enough Lime for All projects. Lime is being stored on pallets covered by plastic. Duane Sergeant on site to disc lime. Wind velocity much too strong to even attempt spreading of lime in most areas. Pit #3 area was in an area where wind was light so Mitchell Bro's spread lime in this area. Duane disc lime and loam (4") was dumped onto area. This was only area to be limed today.

Nick Coner, was on-site to look at area in order to get an idea of process time and trouble in fertilizing AREAS. I showed him all areas. Nick didn't seem concerned about topography and said it would only take him 1 hr to finish Reserve Site.

After lunch Kieth, Duane and myself went to Sorenson and Elung sites. Kieth hadn't seen them and wanted to get an idea of what equipment was needed. The remainder of the Mitchell Bro's crew ~~to~~ began to stretch wire on fence. Wade Weikly was hired to help on the remainder of Reserve and Solice site work.

Hope Thursday is not too windy to lime. This is beginning to hold up process.

Huk J. Est INSPECTOR

DAILY INSPECTION REPORT
HKM ASSOCIATES

PROJECT HILL/BLAINE AUR PROJECT NO. BM186.112
DATE 10/25/90 TIME COVERED 7:00 TO 6:30
CONTRACTOR MITCHELL Bros SUPERINTENDENT TERRY MITCHELL
WEATHER Warm, Breezy, CLEAR TEMPERATURE Max. 82 Min. 45

NARRATIVE

I arrived on-site at 7:00. MITCHELL Brothers, Wade Weekly, and Duane Sargent on-site around Adit #4. Employees spreading lime on Adit #4 and surrounding Subsidence holes. Lime was also spread on Adit #3 and haul Road around these areas. Duane Sargent disced lime to an acceptable degree and crew moved on to Adit #5 to spread lime. This area disced and along with lime spread on Pit #4. After Pit #4 was limed more lime from stockpile on top, was needed. Therefore All of crew loaded lime needed for Salice Roberto site.

All areas requiring lime on Salice Roberto site were finished, spread & disc, by 12:00. Terry MITCHELL, with dozer, stayed on site until 4:30 covering limed areas. This site is now ready for reveg. process.

In afternoon crew spread lime on Adit's 10, 11, Stock piles D & E and Pit #5. Wind was calm in AM, but began to pick-up in Afternoon. Wind of 15 mph was present during P.M., This is a calm day here, therefore lime spreading continued. All bags, empty, were taken to THREE dump and properly disposed of.

This hand spreading of lime is a labor intensive process, but ~~is~~ is not as time consuming as first thought. Big problem is wind velocity!

I mailed a lime sample to HKM office to be tested for quality and size.

I called Greg Underhill to inform him of progress. I told him that I was planning to stay here for week end and get some paper work and fence staking done. Slight chance that revegetation process may begin on Salice Roberto Site.

Mark J. Est

INSPECTOR

DAILY INSPECTION REPORT
HKM ASSOCIATES

PROJECT HILL/BLAINE AUR PROJECT NO. EM186112
DATE 10/26/90 TIME COVERED 7:15 - 1:30
CONTRACTOR MITCHELL BROS SUPERINTENDENT TERRY MITCHELL
WEATHER WINDY, 30-70 MPH, Clear, TEMPERATURE Max. 54 Min. 65
Cool

NARRATIVE

I arrived on-site at 7:15. No others on site until 7:45. Terry had broken 2 bolts to hook gear on dozer, therefore Kieth went to town for new bolts. Rich, loader, began hauling from stockpile around pit #5 to enable provide cover on Adit #10, 11 and Stock piles D-E. Cover in this total area will not exceed 12 inches. There is nowhere to borrow due to coal seams. This area was finished with loader and dozer by 1:30.

Scraper worked in A.M. to level Pit #3 and haul road in Adit #4 AREA.

Kieth told me that he hired Wade : Dale Weekly to finish fencing on Reserve and Salice Rokuto site. This fencing will be done beginning on Saturday 10/27/90. I told Kieth that I would stake corners and panels and gates on Rokuto site on 10/27/90.

Kieth told Duane Sargent that if wind subsides to enable reveg. on Saturday it could be done on Salice Rokuto site. Duane on-site from 8:00 to 8:30.

Crew went home until Monday 10/29/90 at 1:30. Wind Velocity from Radio, was gusting up to 70 MPH with sustained winds of 50 mph. All lined areas are covered. Site is approximately 50% lined.

Rick J. Eder

INSPECTOR

DAILY INSPECTION REPORT
HKM ASSOCIATES

PROJECT HILL/BLAINE AMR PROJECT NO. BH186.112
DATE 10/27/90 TIME COVERED 8:30 To 11:00
CONTRACTOR MITCHELL BRO'S SUPERINTENDENT TERRY MITCHELL
WEATHER WARM, Clear TEMPERATURE Max. 65 Min. 45

NARRATIVE

REVEGETATION PROCESS that had been scheduled for today was cancelled due to lack of progress on 10/26/90 with Lime Application. Dave & Wade Worhly were fencing on Reserve site. I told them that I would stake the Salice Roberto site in the next few days. Left site at 11:00.

Worked on much needed paperwork in P.M.

Rick J. Edwards

INSPECTOR

DAILY INSPECTION REPORT
HKM ASSOCIATES

PROJECT HILL/BLAINE AMR PROJECT NO. BM186.112
DATE 10/29/90 TIME COVERED 7:00 TO 5:30
CONTRACTOR MITCHELL Brothers SUPERINTENDENT TERRY MITCHELL
WEATHER WARM, Breezy, CLEAR TEMPERATURE Max. 48 Min. 68

NARRATIVE

I arrived on-site Reserve, at 7:00. A fuel truck was waiting up on top. He didn't know where the machinery were parked. Thought they might be on Salice Site. I told him that they were parked down in bottom. He went down and fueled LOADER: Dozer. MITCHELL Bro's crew expected on-site by noon.

Dale Wade: Wade: Working on-site stretching wire, Wade told me that he was out of steel and wood posts. I asked him if he wanted to help me stake Salice Roberto fence. WADE, DAE and I staked Salice fence. We put fence Around entire site, instead of two-fences.

TOTAL Roberto fence

3205 L.F.

8 Single Panels

6 Double Panels

2 GATES

MITCHELL Bro's arrived at 11:00 with George MITCHELL as an additional employee. Line was spread Around Slack Pile C and out to old Buildings. This Area was disc'd before 1:00.

After lunch scraper and dozer hauled topsoil dirt From pit 4 area to cover Line in Slack Pile F draw. This draw is ready for Reveg.

Terry, Keith: Rich spread and disc Line on Slack Piles A:B. These piles covered After disking with fill dirt from pit #3 Area.

Only lining to finish is Slack Pile around Pit #2. Revegetation process scheduled for Wednesday AM.

WADE: Dale: Working Approximately 75% Complete on Fencing for Reserve Site.

Left site at 5:30.

Rich J. Eto

INSPECTOR

DAILY INSPECTION REPORT
HKM ASSOCIATES

OBJECT HILL/BLAINE AMR PROJECT NO. SM186.112
DATE 10/30/90 TIME COVERED 6:30 TO 6:00
CONTRACTOR MITCHELL Brothers SUPERINTENDENT TERRY MITCHELL
WEATHER WARM, Partly Cloudy, Dry TEMPERATURE Max. 63 Min. 35

NARRATIVE

I arrived on-site at 6:30. All of MITCHELL Brothers crew on site. Terry and Kirtin spreading lime adjacent to Pit #2. Rich using loader to haul topsoil into Adits 15:11. Dozer then spread and finished this AREA. SCRAPER shaped Pit #4 and now it is ready for revegetation.

I asked Terry to find some extra topsoil to enhance the cover on Stack Pile A. This was done and Area 3 now ready for reveg. LOADER piled topsoil on limed Areas adjacent to nonused Topsoil Binow Area in Area #2. Dozer will spread and this area will be ready for reveg. Rock was placed in stream channel adjacent to pit #2 and Stack Pile A. Pit #4 was reshaped using dozer and scraper.

Fertilizer truck on-site at 2:00 and done by 3:00. He then went to Saline Roberts and fertilized. No problems encountered here. Kirtin had gotten seed and I pulled tags. Crew loaded 165 straw bales on 2-trucks to begin mulching. Dura SARGENT completed disking of fertilizer About 6:30. I will have to see if HALL road & Scarification is Adequate. This is quite hard.

Crew broadenset fertilized, tracked in with dozer, seeded and mulched, then tracked in with dozer to Areas to stop for machinery. I didn't let the dozer track straw too much, this process isn't the best.

Talked to Greg Underhill in the evening and explained that crew expects to be on Sorenson Site by Wednesday 10/31 P.M.

Left site at 6:00

Rich J. Fote

INSPECTOR

DAILY INSPECTION REPORT
HKM ASSOCIATES

OBJECT HILL/BLAINE AUR PROJECT NO. 8M186.112
DATE 10/31/90 TIME COVERED 6:45 TO 6:15
CONTRACTOR MITCHELL BROTHERS SUPERINTENDENT TERRY MITCHELL
WEATHER WARM, Cloudy, CALM, DRY TEMPERATURE Max. 65 Min. 40

NARRATIVE

I arrived on-site at 6:45. Crew working on Ave 3, mulching. I explained to Terry the need to scarify all access roads within the Reserve Site. He said that he could rip them with the dozer but then they would be unusable. I spoke to Dale: Wade Weekly about their need for the main road in bottom of Boulder. They express the need for some kind of road here, therefore ripping was not done. I asked Terry to disc the roads two-three times and that should take care of it.

Crew continued behind and drill to mulch only mulched non-vegetated areas. Wade Weekly asked for the seeding only of all roads used for fencing. He express the concern of erosion if scarified.

Wade: Dale Weekly have fencing on reserve Site done, except for Acres.

Crew moved to Solor Site with Dozer, and Mulcher at 5:15. By the time they got to Site darkness prohibited any further work. Rain is forecast for tonight and tomorrow so it could get to be a concern.

Crew expected to move to Sorenson site 11/1/90.
Left Site 6:15.

Rich J. Estes

INSPECTOR

DAILY INSPECTION REPORT
HKM ASSOCIATES

PROJECT HILL/BLAINE AMR PROJECT NO. 8M186.11Z
DATE 11/1/90 TIME COVERED 6:45 to 5:15
CONTRACTOR MITCHELL BROTHERS SUPERINTENDENT TERRY MITCHELL
WEATHER Cold, Windy, Rained in early A.M. TEMPERATURE Max. 38 Min. 30

NARRATIVE

I arrived on-salvo Site at 6:45. Crew was seeding by broadcast Method, too steep for drill. Wind was blowing 10-15MPH but it didn't cause a problem when mulch was placed. Finished mulching at 9:30. I told Terry that the roads within the site needed to be seeded. This is done by request of Wade Weekly.

I explained to Terry that there were 2 roads on the Reserve Site that needed to be seeded.

Crew began loading equipment to move to Sorenson site at 10:00. I left site at 11:00.

I met crew on Sorenson Site at 1:00. I walked thru the site with Terry and George Mitchell to explain what was needed. The coal stack pile contained approximately 250 yd³. The subsidence holes didn't look as if they would hold all of stack. 2 of the bigger subsidence holes were used to make a pit to use for extra coal stack. Topsoil on this site is not going to be a problem. There is alot of garbage in some of these holes.

I left site at 5:15.

Rick J. Eder INSPECTOR

DAILY INSPECTION REPORT
HKM ASSOCIATES

PROJECT Hill/BUTINE AMR PROJECT NO. 8M186.112
DATE 11/2/90 TIME COVERED 7:00 - 5:30
CONTRACTOR MITCHELL BROS SUPERINTENDENT TERRY MITCHELL
WEATHER Cold, Clear, Snow at 5:00 TEMPERATURE Max. 35 Min. 20

NARRATIVE

I arrived on Sorenson Site at 7:00. Crew not here yet. I spoke to Mr. Sorenson to find out where the subsidence hole south of house was located. He showed me an open shaft that extends down at least 15 ft at an approximate dip of 60° SE. It is located on an old reclaimed mine. Rock fill would be ideal for filling, but not sure if contractor can find rock in this area. I spoke to TERRY and he decided to take material from building foundation on Sorenson Site to fill hole. This should be adequate material.

Crew worked removing coal slack pile and filling subsidence holes. SUBSIDENCE holes A/B were extended to make a pit size $35' \times 100' \times 4'$. While digging in this pit a hole was found to extend 10' underground. Backhoe collapsed this hole and then backfilled prior to any placement of coal slack. No other open holes found while investigating subsidence holes. All subsidence holes filled with coal slack and lined, then mounded with topsoil.

Coal Slack pile is surrounded by water from springs that come out of hill with adit. This made removal of slack extremely difficult using scrapers or dozer. Dozer and scraper both were stuck here once. This area was backfilled and lined by 4:30. Cover material, topsoil, will have to come from end Eastern extension of the pit on top of hill.

Adit was found to be filled with 3'-5' diameter rock, therefore ~~when found~~ no further investigation was advised. Adit sloped to match existing slope. ~~Mr~~ Couldn't do Adit here, didn't want to mess with existing vegetation adjacent to Adit.

I stacked 1700 L.F. of fence w/ 2 GATES around Site.
Salice Roberts Site 50% complete fenced.

I left site at 5:30.

Rick J. Ester

INSPECTOR

DAILY INSPECTION REPORT
HKM ASSOCIATES

PROJECT HILL/BLAINE AWR
DATE 11/3/90
CONTRACTOR MITCHELL BROTHERS
WEATHER Cold, Cloudy, Dry

PROJECT NO. PM186112
TIME COVERED 7:00 TO 4:30
SUPERINTENDENT TERRY MITCHELL
TEMPERATURE Max. 36 Min. 12

NARRATIVE

I arrived on Sounson Site at 7:00 A.M. Crew there warming equipment. Rich, LOADER OPERATOR, WENT BACK to town, turns out He HAS pneumonia. Duane SARGENT brought a hand held Whurly-Bird Fertilizer spruder. He spread fertilizer where as Subsidence holes became ready. He then disced and seeded.

Adequate COVER was found for coal slack p.l. Building foundation Material was taken to open Adit south of Ranch house and used for fill material. Topsoil was then taken over and spread and revegetated.

~~THE~~ LOADER universal joint broke at 10:00. Mitchell Bros had parts but borrowed a drill from Mr. Sounson. The loader only down for 1 hr. Dirt work finished by noon. Mulching was finished by 4:00. All revegetation done by hand broadcast method.

Crew loaded Dozer and took it to Ehlang site. Remainder of day spent loading other equipment and clean-up. Scraper is going to sit on Sounson site until it can be moved legally to Glendive on Monday.

I left site AT 4:30. When I got back to room I called Greg and informed him that we would be starting Ehlang site Sunday.

Rick J. Etkin

INSPECTOR

DAILY INSPECTION REPORT
HKM ASSOCIATES

PROJECT HILL/BLAINE AVE

DATE 11/4/90

CONTRACTOR MITCHELL BRO'S

WEATHER WARM, Cloudy, Dry,

PROJECT NO. 8M186.112

TIME COVERED 7:30 TO 6:00

SUPERINTENDENT TERRY MITCHELL

TEMPERATURE Max. 52 Min. 35

NARRATIVE

I followed 1/2 of crew to Ehlans site at 7:30. Crew was were hauling backhoe, dozer already on-site. Terry: George stayed on site and began work on subsidence holes. Sid took truck back to meet Rich: Kieth and load loader, tractor: disc, and lime from Spensen site.

TERRY: George finished everything they could do with dozer: here at 10:30. The rest of the crew didn't arrive on-site until 1:00. They began filling holes with slack and liming. I staked 1050 L.F. of fence in the A.M. I only put 1 GATE into site. Site not big enough and Terrain limits the need for another GATE.

Fertilizer and Seed was done by hand broadcast method. As usual with these sites even material is scarce, when you think you have found a good source you hit coal slack or on outcrop. Trying to keep disturbed areas to a minimum. Finished site At 5:30. I left site at 6:00.

Rich J. Est

INSPC

APPENDIX B
BID TABULATIONS

ELAINE/HILL PROJECT
BLAINE AND HILL COUNTIES, MONTANA
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DSL/AMKB 90-019
DATE: September 18, 1990

BID TABULATIONS			ENGINEER'S ESTIMATE			MITCHELL BRO'S, INC.			SHUMAKER TRUCKING & EXCAVATING CONTRACTORS, INC.		
ITEM NO.	ESTIMATED QUANTITY	UNIT	DESCRIPTION	UNIT	PRICE	TOTAL PRICE					
RESERVE SITE											
1.	1	LS	Mobilization		750.00	750.00	2,000.00	2,000.00	2,000.00		0.00
2.	5,800	CY	Pit Excavation and Spread		1.50	8,700.00		5,800.00	15,950.00		0.00
3.	7,380	CY	Slack Removal		1.50	11,070.00		7,380.00	16,605.00		0.00
4.	1	LS	Debris Removal		700.00	700.00	2,000.00	2,000.00	3,000.00		0.00
5.	1	LS	Adit/Subsidence Backfill		7,200.00	7,200.00	6,200.00	6,200.00	7,500.00		0.00
6.	3.85	ACRES	Line Application w/ 20 T/A		1,600.00	6,160.00		6,160.00	4,620.00		0.00
7.	4.55	ACRES	Revegetation		1,000.00	4,550.00		5,460.00	8,190.00		0.00
8.	6,635	LF	4-Wire Fence		1.00	6,635.00		11,034.01	7,962.00		0.00
9.	600	CY	Topsoil		3.00	1,800.00		900.00	1,800.00		0.00
			TOTAL BID FOR RESERVE SITE			47,565.00		46,934.01	67,627.00		
SALICE ROBERTO											
1.	1	LS	Mobilization		500.00	500.00	1,000.00	1,000.00	1,000.00		0.00
2.	1	LS	Adit/Subsidence Backfill		2,700.00	2,700.00	2,000.00	2,000.00	2,000.00		0.00
3.	0.30	ACRE	Line Application w/ 20 T/A		1,600.00	480.00	2,000.00	600.00	1,500.00		0.00
4.	320	CY	Topsoil		3.00	960.00		480.00	960.00		0.00
5.	0.50	ACRE	Revegetation		1,000.00	500.00	2,000.00	1,000.00	1,500.00		0.00
6.	1	LS	Debris Disposal		200.00	200.00	100.00	100.00	1,000.00		0.00
7.	2,200	LF	4-Wire Fence		1.00	2,200.00		3,586.01	2,640.00		0.00
			TOTAL BID FOR SALICE ROBERTO SITE			7,540.00		8,766.00	10,600.00		

THINK: Bid tabs

BLAINE/HILL PROJECT
BLAINE AND HILL COUNTIES, MONTANA

DSL/AMRB 90-019
DATE: September 18, 1990

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BIO TABULATIONS				ENGINEER'S ESTIMATE			MITCHELL BRO'S, INC.			SHUMAKER TRUCKING & EXCAVATING CONTRACTORS, INC.		
ITEM NO.	ESTIMATED QUANTITY	UNIT	DESCRIPTION	PRICE	UNIT	TOTAL PRICE	PRICE	UNIT	TOTAL PRICE	PRICE	UNIT	TOTAL PRICE
EHLANG SITE												
1.	1	LS	Mobilization	500.00		500.00	1,000.00		1,000.00	1,000.00		1,000.00
2.	1	LS	Adit/Subsidence Backfill	3,600.00		3,600.00	2,750.00		2,750.00	2,000.00		2,000.00
3.	1	LS	Debris Disposal	200.00		200.00	250.00		250.00	1,000.00		1,000.00
4.	0.70	ACRE	Lime Application @ 20 T/A	1,600.00		1,120.00	2,000.00		1,400.00	2,000.00		1,400.00
5.	850	CY	Topsoil	3.00		2,580.00	1.50		1,290.00	3.00		2,580.00
6.	1.0	ACRE	Revegetation	1,000.00		1,000.00	2,000.00		2,000.00	2,000.00		2,000.00
7.	1,305	LF	4-Wire Fence	1.00		1,305.00	1.58		2,188.30	1.20		1,662.00
			TOTAL BID FOR EHLANG SITE			10,385.00			10,878.30			11,642.00
SORENSEN SITE												
1.	1	LS	Mobilization	500.00		500.00	1,000.00		1,000.00	1,000.00		1,000.00
2.	1	LS	Adit/Subsidence Backfill	2,200.00		2,200.00	3,250.00		3,250.00	2,000.00		2,000.00
3.	1	LS	Debris Disposal	500.00		500.00	250.00		250.00	1,000.00		1,000.00
4.	0.45	ACRE	Lime Application @ 20 T/A	1,600.00		720.00	2,000.00		900.00	5,000.00		2,250.00
5.	550	CY	Topsoil	3.00		1,650.00	1.50		825.00	3.00		1,650.00
6.	0.70	ACRE	Revegetation	1,000.00		700.00	2,000.00		1,400.00	2,000.00		1,400.00
7.	1,935	LF	4-Wire Fence	1.00		1,935.00	1.78		3,444.30	1.20		2,322.00
			TOTAL BID FOR SORENSON SITE			8,205.00			11,069.30			11,622.00
TOTAL BID FOR BLAINE/HILL PROJECT												
						23,695.00			77,647.61			101,491.00

MTAMR1:BidTabs

APPENDIX C
ANALYSIS OF CONSULTANTS COSTS

APPENDIX C

ANALYSIS OF CONSULTANTS COSTS

Costs are HKM costs only. Delta Engineering was involved in the initial design. HKM reviewed the design and made some changes as deemed necessary. Design costs for Delta's work are not included in this statement.

<u>ENGINEERING SERVICE</u>	<u>AMOUNT</u>
Design Engineering-----	\$ 10,084.64
Construction Engineering and Project Administration Cost-----	\$ <u>17,455.00</u>
TOTAL PROJECT ENGINEERING COST-----	\$ <u>27,539.64</u>
CONSTRUCTION COST-----	\$ <u>73,460.32</u>

Design Engineering/Construction Cost-----	13.73%
Construction Engineering/Construction Cost-----	23.76%
Total Engineering Cost/Construction Cost-----	37.49%

